MVC 2.8 Release Note – 17th Mar 2008

This document details the key features within the MVC 2.8 Release. This document enables organisations to assess the capabilities of the new release.

1. Rich UI Control Features

1.1. Inclusion of Dojo 1.0

The leading Open Source Ajax toolkit Dojo 1.0 release is shipped with MVC 2.8 by default. This enables any of the Ajax features to be used 'out-of-the-box'. Dijit widgets can be attached to existing Hyfinity UI controls as well as adding independent controls. For example, by simply adding a couple of 'custom attributes' to a Field it can be transformed into a "Spinner" control, and by adding attributes to a Group it can be transformed into an "Accordion" UI feature. An important element of this approach is that the UI controls can still degrade gracefully to usable and accessible XHTML as MVC detects whether Script has been disabled by the Browser.

1.2. Extend UI Controls with any Ajax Widget Toolkits

Improvements have been made to enable the simple inclusion of any Ajax Widget Framework or Java Script files into a Web Application e.g. Dojo, Prototype, JQuery, Ext, etc. A "mix-and-match" approach can be adopted. In addition many of the Ajax control features can be applied to standard Hyfinity UI controls with simple application of Ajax 'Events'. You may for example wish to use animation capabilities from one Ajax toolkit and UI presentation features from another.

1.3. Accessibility and Rich Ajax 'Gracefully Fused'

There have been a number of minor enhancements to widen the support for 'gracefully degrading' Ajax features. The XHTML generated is syntactically Triple-A compliant conforming to the W3C Web Content Accessibility Guidelines version 1.0 and 2.0 tests. There has been extensive usage of the full range of XHTML semantics to improve Disability Discrimination Act (DDA) compliance e.g. relationships of Labels and Fields, Fieldsets, Table columns, rows and cells, etc. The majority of UI controls can be used on all Modern Browsers including Mobile Devices with XHTML Transitional Support. Note: Some Mobile Device Browsers have a restricted XHTML syntax.

2. Automated Bindings for Multiple Page/Form Actions

2.1. Simple definition of Event/Action Data Bindings

There has been significant extension to enable the MVC Studio to define the data bindings automatically for various Actions that will be sent back to the server-side processing based on the activation of a client-side (browser) event trigger. It is now possible to define within the Studio that different XML structures can be returned based on different XML documents, Schemas or WSDL operations. This feature increases developer productivity by removing the need for introducing manually defined rules when multiple Actions for a Page have different Data Binding needs. If a Schema/WSDL is used as the definition of the Actions XML to be submitted then the Data Bindings will be automatically generated.

2.2. Sharing Data Binding Details across Actions

It is possible to share the automatic data binding details across one of more Page based Actions. This approach reduces the quantity of data binding information required for a Page.

2.3. Separate Data Bindings for Pages and Partial Pages

It is possible to define separate Data Bindings for all actions whether on Partial Pages or Full Pages. The Data Bindings screen has been extended to allow all Actions, associated bindings and example XML files to be displayed in order for the bindings to be viewed and altered if necessary.

3. Web Oriented Architecture

3.1. Simple REST Support

It is now possible to use a basic data structure to define various HTTP based details such as:

- REST based calls – Create (POST), Read (GET), Update (PUT) and Delete (Delete)
- Dynamic URLs based on your XML Data

A single rule can be used to enable CRUD style access to REST based services. The change also enables various HTTP requests to be sent and received whether XML message payloads are to be passed. For example some authentication requirements will only require HTTP header attributes. Note: To activate the processing it is necessary to configure its usage based on using the advanced deploy options for the Proxy service details.

3.2. Enhanced HTTP Authentication Options

With utilisation of the Apache HTTP Client various types of authentication mechanism can be used. This includes Basic, Digest and the encrypting Microsoft NTLM (NT LAN Manager) methods. It is also possible to use a Plug-in mechanism for custom authentication methods.

4. Service Oriented Development

4.1. Enhanced Component Patterns

The product has been further extended to enable the simple creation of various 'Model' layer component patterns for accessing external resources such as: Rest resources, File Systems and SQL Database Resources.

4.2. Rapid SQL Integration

SQL support is now available with 'SQLiser' engine and supporting pattern. This allows SQL database interactions to be setup quickly for SELECT and CRUD type requirements without having to access via Web Services. The engine delivers a SOA-centric 'model' layer capable of producing XML to SQL and SQL results to XML transformations. This supports Web application and eForms development that only have local SQL access.

5. Studio Usability & Productivity

5.1. Studio – Improved Navigation Options

Various changes have been made to introduce simpler and faster navigational aspects around the studio elements:

- All studio elements have a new Tab design approach
- Clarity added with the introduction of major 'do' type action icons at the top of the screens. For example, FormMaker – Generate Page, Preview Page, Deploy Application, etc.
- Where possible activities have been altered to perform partial page refresh behaviour to speed up the Studio
- Navigate to different pages from the Page Structure, Field Details and Binding Tabs using a simple drop-down list
- Right click options added on all elements displayed on FormMaker graphical canvas panels
- Improved usage with Internet Explorer 7 and 8 using the Tab based browser capabilities
- Improved handling of opening 3rd party XML editors from the Studio
- Addition of further context sensitive help icons

5.2. Studio - Multi-Browser Support Preparation

The Design Studio has been evolved to support Multiple Browsers for all web pages and Ajax elements, with the exclusion of the graphical 'canvas' SVG element. This element is currently scheduled for replacement with V3.0 and possibly earlier due recent advancements.
Note: That all applications created by the Design Studio support all modern Browsers (IE, Firefox, Opera, Safari).

5.3. Standard Structure to/from the Browser

The XML structures that flow through MVC layers have been standardised around the 'eForm' control and data structure for convenience. Note: This will only apply for new projects and binding defaults.

5.4 FormMaker - Changes to terminology

The 'Handler' terminology has been removed. 'Handlers' are now referred to as 'Controllers' to provide a simpler understanding of the fundamental MVC pattern used by the product and to align with the Dashboard Logs display.

5.5 FormMaker – Improved Page Structure (Layout)

The layout of the Page Structure panel has been improved to simplify understanding of the structure of groups and various field controls. The Page Structure is a logical representation of the page illustrating the dynamic characteristics of the Page.
It is now simpler to see a number of aspects such as:

- Groups that have styling will have a solid border
- Groups that have no styling (just structural) will have a 'dotted line' border
- Groups or Fields that may be hidden/disabled will have a 'dashed' border
- Group that are Tab structures will be highlighted
- Hidden fields will have a 'dotted line' border

- Enhanced styling for output and input controls
- Empty grid cells are clearer

5.6. Studio – Various enhancements or fixes

Various changes have been made to introduce new capabilities or simplify usage:

- Application Map – Improved renaming/deleting options
- Application Map – Page Panel has been enhanced to make the various options and their dependencies more obvious
- Application Map – The various right hand panels (Page/Controllers/Actions) have been reorganised including moving advanced options to the bottom
- Application Map – Hiding of Proxy details when selecting a Service used by a Controller
- Application Map – Improvements to Demonstration Skin and Stylesheet

- Rules – 'Move' operator added
- Rules – Ensure Language variable is maintained through all Page submissions
- Rules – Cache rules now enforce the selection of 'Session' or 'Application' type
- Rules – Enable Ajax based 'Save' and 'Deploy' operations in RuleMaker. The 'Deploy' operation performs a save and deploy to the runtime platform operation.
- Rules – Enhancements to the Copy/Paste Rules capabilities

- Page Structure – Elements in Grids can be spanned across cells vertically and/or horizontally
- Page Structure – Label defaults are created from Field name using 'Title' style with spaces
- Page Structure – Default data bindings are generated automatically when Schema or WSDL elements are dragged onto Page Structure canvas
- Page Structure – Data elements can be selected from the data definition (WSDL/Schema) for the Page definition or the Action definitions used on the Page

- Field Details – The width for strings, numbers and dates will be automatically set based on the WSDL/Schema data constraint definitions
- Field Details – New 'Visibility' section for enabling Hiding/Disabling of Groups, Repeats and Fields
- Field Details – Various sections have been reorganised to move more common options at the top of the list
- Field Details – Conditional styling behaviour for Fields, Labels, Repeats and Groups e.g. change font to red for a negative value and provide a green background to the field if the value is under a budget value
- Field Details – Improved handling of Boolean fields from Schemas
- Field Details – Text Areas expand/collapse based on content entered
- Field Details – Added support for Multiple Select Box UI control
- Field Details – Improvements to Date/Time handling of formats e.g. Can have drop-down list for Day and Month
- Field Details – Partial Page client-side validation independent of parent Page
- Field Details – Partial Page Events can use Actions defined against the parent Page
- Field Details – Inclusion of 'OnLoad' Events for a Page or Partial Page
- Field Details – Added support for Events against Groups
- Field Details – Label settings disabled automatically for Hidden Fields

- Field Details – Can reorder the sequence of events to be activated
- Field Details – Fixed problem with checkboxes in repeat tables

- Accessibility Changes – Improved handling of 'Repeat' based table structures with Headers and Footer structures
- Accessibility Changes – Ensure 'Images' always have ALT text by using the accessible text option, the field label or the field name respectively
- Accessibility Changes – Fixed height scrollable 'Repeat' tables for Opera and Safari

- Data Bindings – Improved handling of Fields that don't need binding information
- Data Bindings – Simple edit capability for example XML document on Data Binding screen
- Data Bindings – Adjustments to various xpath labels to add clarity
- Data Bindings – Improvements to binding value validation – handles all possible functions
- Data Bindings – Documents included into the Studio will automatically add the necessary XML namespaces

- General – Enable renaming of namespaces
- General – Documentation is opened in a separate Browser Tab/Window
- General – Performance improvements for Ajax Partial Page calls
- General – The 'Repository' view has been simplified
- General – Deployment Reporting has been extended to provide greater detail when there is an error
- General – Changes to the navigation options on 'WSDL Import' and 'Deployment' screens

6. Deployment and SOA Machine Platform

6.1. FormMaker - Faster Deployment

The deployment speed within FormMaker has been increased considerably with smarter detection of changes that need to be deployed from Design to Runtime environments. The first project deployment will perform at previous speed levels, but all subsequent deployments will be considerably faster. This significantly reduces the round-trip time between FormMaker, RuleMaker and the Dashboard facilities when a developer is operating in an iterative development manner. Full application deployment will take just a few seconds and automatically restart the runtime web application server.

6.2. Logging File Handling

The log file configuration settings have been extended to enable 'rolling logs' capability by incorporating Log4j. This allows the file to reach a defined size and then the oldest entries are replaced with the newest entries. This is most useful for Production environments.
Log files will only be refreshed when the Application Server (e.g. Tomcat) is re-started or the 'Refresh Logs' option is used manually. Shutting Down of the Application Server will maintain the logs.

6.3. Import/Export Migration Capabilities

MVC 2.8 introduces Version 2.0 of the underlying Metadata. This has been introduced as a result of the multiple action bindings capabilities described in Section 2 above. Projects developed on older

versions of MVC will need to be migrated. The Project Import/Export facilities have been extended to provide the migration capabilities by adapting to the appropriate Metadata Version of a Project. The Import process will automatically upgrade a Version 1.0 Metadata Project to Version 2.0. Project Exports will have the appropriate Metadata Version published within the exported project details.

Note: All efforts have been made to automatically migrate Projects automatically. However, the Web Application elements such as CSS, script files, images, etc. are not altered during the migration process as they may have been modified by the developer manually. It may be necessary to manually upgrade the script libraries used within the Web Application. Example scenarios include: older versions of Dojo or occasions where Hyfinity supplied scripts have been manually altered. If there have been no changes to the script files, then the 'js' directory can be copied from the supplied 'Example' Web Application.

7. Documentation and Frequently Asked Questions (FAQ)

7.1. FAQ Details

For future maintainability 'How To' type guidance will be moved to the online system hosted at http://www.hyfinity.net/faq/. Examples and scenarios will be added on a continuous basis. This system also allows users to post their own suggestions for publication.
Note: The documentation shipped with the product will focus on 'Reference' type information.